# BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects and discussants invited.

## POLIOMYELITIS

**Bert Thomas, Sacramento**—My remarks on this round-table discussion will accentuate only one point in treatment—immobilization. By this I refer not to the haphazard pillow-splint or partial, short-time rest. On the contrary, my dictum is immediate plaster. Complete rest under plaster should be continued for at least one month following the onset of paresis. Then start gentle surface massage; if there is any pain connected with this maneuver discontinue it immediately and return to strict plaster rest until no pain is produced by such treatment.

In the flare-up of 1925 it was my privilege to have contact with eleven cases, six of which were under my immediate care. Urotropin, phenacetin, heat, supporting fluids, and immobilization were all employed, but I feel that the satisfactory results were due to the use of plaster alone.

Before one may satisfactorily follow through with the supervision of his patient the routine suggested, he must thoroughly explain the reasons for it, and so gain the complete confidence of the family. The most difficult point to overcome will be the one so often encountered in the treatment of head injuries: "Why don't you do something?" Bring home the fact daily that any positive action applied to the parts affected will be detrimental rather than beneficial to them.

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**Fred B. Clarke, Long Beach**—One feature of this disease not sufficiently well appreciated is the fact that it is a general systemic disease. The involvement of the lymph nodes, spleen and gall bladder, the short perivascular infiltration in the viscera and other findings point to its general character. It is only in the exceptional case that the virus gains access to the cerebral spinal system, giving rise to those symptoms upon which we usually base a diagnosis.

The symptoms due to the general systemic involvement, such as anorexia, lassitude and headache, culminating usually in vomiting, are the same that may occur with any generalized infection, and unless an epidemic is present they are not given very serious consideration. Frequently a more careful investigation will reveal muscular tenderness of the extremities and neck, with disturbance of the reflexes, indicating involvement of the cerebrospinal system; aids in arriving at a diagnosis in the preparalytic stage, which are of the greatest importance.

One early symptom which is of undoubted value, the irritability shown by the child when examined, is out of all proportion to what one would expect, considering the degree of lassitude ordinarily present. This irritability of the child, combined with the tenderness of extremities upon movement, with stiffness of the neck, justify a lumbar puncture, which is of great help, but will not always differentiate from lethargic encephalitis. However, the colloidal benzoin test helps very decidedly in differentiation.

A diagnosis in the preparalytic stage is of great value because of the very excellent results from the use of convalescent serum which is given both intraspinally and intravenously. The number of cases so far treated is not sufficient to enable a definite estimation of the value of the serum. The results in the New Zealand epidemic and in the Detroit epidemic have shown it to be of value. Rosenow's serum has also shown, as reported by several observers, very excellent results. In the Detroit epidemic convalescent serum and Rosenow's serum were both used with good results. It should be borne in mind that the convalescent serum or Rosenow's serum, used after paralysis occurs, do have value in some cases, even late in the disease.

After the onset of paralysis, which usually occurs between the second and fourth day, if it occurs at all, the most important consideration is to protect the damaged muscle group by proper splinting. Often the paralysis is made much worse by improper splinting. To encourage the child frequently to demonstrate to relatives and friends just how fast improvement is taking place is absolutely contraindicated.

Demands frequently are made for the early use of massage and electricity by relatives and friends of the patient, and this is at times very hard to combat. Unless used by an expert they are productive of a great deal of harm. I do not believe that the general practitioner or general surgeon should attempt the after care of these cases. Patients should be placed under the care of the best orthopedic surgeon available if they are to have the best treatment for functional recovery.

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**A. G. Bower, Glendale** — Since Underwood gave the first description of poliomyelitis in 1787, we have traveled a long way in our understanding, diagnosis, and treatment of the disease, but unfortunately there yet remain wide gaps in our knowledge of this justly feared disease. Some authors of wide clinical experience believe that with our present knowledge we remain unable to diagnose as high as 70 per cent of these cases, inasmuch as we only recognize the disease as a distinct entity in those cases which give signs of involvement of the central nervous system, and these will probably rarely exceed 40 per cent. Under such conditions we are all probably calling

the majority of the cases we see by some other name, such as la grippe, tonsillitis, "teething," etc. Until such time as more accurate methods of diagnosis can be devised we shall probably not advance very far in our prevention of epidemics of the disease, for these undiagnosed cases undoubtedly present a tremendous factor in spreading the infection, especially in time of epidemic.

It would not seem wise to enter into the controversy concerning the etiological factor of the disease. Rosenow claims to have isolated a specific streptococcus as the cause; Noguchi and Flexner a "globoid" body, which exists in a filtrable virus form, and which looks like a streptococcus in that form capable of microscopic visualization. It may yet be possible that both views are correct.[1] Rosenow claims to have devised a skin test with the toxin of his streptococcus which is strongly positive in infected persons during the acute stage and negative in convalescents.[2] He further states that he has devised a highly diagnostic precipitin test made with material obtained from the nasal cavities of positive carriers and immune horse serum.

[3] It is of interest that in 1926 a milk-borne epidemic was described that apparently was caused by contamination of the milk through contact with a milker who later contracted the disease. This method of spread is probably highly unusual, but it adds another link to our knowledge of the mode of transmission.

Intravenous and intramuscular injections of convalescent serum (or whole blood in some instances) is coming in for much favorable comment. In our few trials it has proven disappointing. Intraspinal serum injection we have also found disappointing and it is receiving very little favorable comment among clinical authors. Levick[4] reports some rather unusual results in old apparently hopelessly paralytic cases by the intelligent use of a special physiotherapeutic technique that he has devised which includes quartz light, red light, galvanic stimulation, muscle re-education, etc. We concur strongly in what our colleagues have stated regarding early immobilization of paralyzed muscles in the acute cases.

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**Harold K. Faber, San Francisco**—I should like to re-emphasize two points which are of particular importance now that we stand in the presence of an epidemic: the probable mode of spread of the disease, and convalescent serum.

The practitioner should keep in mind that in the vast majority of cases the disease is spread *by contact* either with a healthy carrier or with a patient in the early stages of the paralytic form or with the so-called abortive form. The symptoms in either case, while unrecognizable as poliomelitis, are sufficiently suggestive to be viewed with suspicion and to be used as a basis for preventive measures. The symptoms to be watched for are those of a nasopharyngitis or bronchitis with fever, headache and other aches and pains, particularly of the back, the whole picture simulating influenza in many respects; or of a gastro-enteritis with vomiting and diarrhea. The public should be advised to avoid close proximity with people having symptoms of a cold and should keep out of crowds and assemblies as far as possible. For various reasons it is unwise to close the schools, but children with the symptoms above should not be allowed to go to school, and nurses and teachers should be particularly vigilant in their daily inspections. It is probable that infection is less often acquired by the inhalation of droplets than by direct transference of the virus from the hands to nose and mouth. Education of the public to avoid touching the nose, mouth or face; to wash the hands frequently, especially before meals, and to change handkerchiefs oftener would be of the greatest possible service.

Convalescent serum is the only proved specific means of treatment. That it can neutralize the virus of poliomyelitis is known, and the clinical proof of its therapeutic value rests on controlled observations. Proof of the value of Rosenow's serum does not appear to be equally convincing. Convalescent serum offers a fair chance of preventing or lessening permanent paralysis if it is given at the very onset of the symptoms indicating involvement of the central nervous system, and may be of some value within the next forty-eight hours. Shaw and Fleischner have shown that whole blood from a convalescent, given intramuscularly, has at least equal value. *Every physician who has a patient convalescent from poliomyelitis should make an earnest effort to obtain serum from that patient and should place it at the service of the medical profession at large.*

Various hospitals, the medical schools, and the State Board of Health are prepared to cooperate with him in obtaining, preparing and storing the serum. Unfortunately great difficulty has been experienced in obtaining it, and stocks of the serum are now very low. Physicians should regard their assistance in this matter not only as a matter of public duty, but as of vital importance to themselves in the proper handling of the cases which they are likely to be called upon to treat at any time. Because of the advantages of pooled serum, which has been properly tested bacteriologically and serologically (Wassermann test), it is preferable to have it collected at a few adequately equipped centers. Blood may be withdrawn as soon as three weeks after the subsidence of fever. The highest concentration of antibodies is during the first few months after the attack, but there is reason to suppose that they may be present in lower concentrations for some years.

1. Rosenow, E. C.: Jour. Inf. Diseases, 38, 529, 1926.
2. Rosenow, E. C.: Jour. Inf. Diseases, 38, 532, 1926.
3. Knapp, A. C.; Godfrey, E. S.; Aycock, W. L.: J. A. M. A., 87:635, August 28, 1926.
4. Levick, Murray: Lancet, 2:323, August 15, 1925.

**Immunization of Medical Attendants**—While every precaution is exercised to minimize the danger of exposure, still the occurrence of three cases of diphtheria among the nurses suggests very strongly a remedy that should be inaugurated at once. Every pupil nurse should be given the diphtheria toxin-antitoxin inoculations during her period of training so as to immunize her against the disease. Incidentally, it may not be amiss to direct attention to the need of vaccinating every nurse or attendant in hospitals against smallpox.—New York Department of Health Weekly Bulletin.